

CLAIMS

1. A method for cleaning the ink chamber of a printing unit, preferably a ~~chamber~~ in a doctor blade, where pressurised cleaning liquid is sprayed into the chamber through at least one cleaning nozzle, **characterised** by partial filling of a hydrophore ~~with~~ liquid from a storage tank, a supply system or a water tap by means of a high-pressure pump, building up a predetermined pressure in the hydrophore, activation of at least one valve which is disposed between the hydrophore and the cleaning nozzle for injecting at least one shot of cleaning liquid in the ink chamber for executing a cleaning cycle controlled by the activation cycle of the valves.
2. Method according to claim 1, **characterised** by filling a storage tank ~~with~~ cleaning liquid and transferring a volume of cleaning liquid from the storage tank for filling the hydrophore, where each cleaning cycle includes a number of shots with an interval of 5 - 15 seconds, preferably about 10 seconds.
3. Method according to claim 1 or 2, **characterised in that** the hydrophore ~~and~~ the ink chamber are blown through for driving out cleaning liquid at the termination of a cleaning cycle.
4. Method according to claim 1, 2 or 3, **characterised in that** the cleaning liquid is heated, possibly in the storage tank, before filling into the hydrophore, ~~and~~ that the hydrophore is emptied at each cleaning cycle and is only re-filled with heated cleaning liquid immediately before a new cleaning cycle.
5. Method according to any preceding claim, **characterised in that** the predetermined pressure in the hydrophore is between 3 and 30 bar, preferably between 12 ~~and~~ 20 bar and particularly about 16 bar.
6. Method according to any preceding claim, **characterised in that** each cleaning nozzle is spring biased towards a closed position, where it covers injection openings in the chamber, and that the pressure in the cleaning liquid overcomes the spring biasing by an injection shot.

7. Method according to claim 5 and 6, **characterised in that** each cleaning nozzle is adapted to open at a pressure between 2 and 12 bar, preferably between 4 and 8 bar.

8. A system for cleaning an ink chamber of a printing unit, preferably a chamber in a doctor blade, including at least one cleaning nozzle through which pressurised cleaning liquid is sprayed into the chamber, **characterised in that** it includes a hydrophore connected with a storage tank, supply system or a water tap via a high-pressure pump for transferring a volume of cleaning liquid for partly filling the hydrophore for building up a predetermined pressure in the hydrophore, at least one activatable valve disposed in a connection between the hydrophore and the cleaning nozzle, and which is adapted for opening the connection for injecting a shot of cleaning liquid into the ink chamber, and which is connected with a control for executing a cleaning cycle controlled by the activation cycle of the valves.

15 9. System according to claim 8, **characterised in that** the hydrophore is connected with a source of pressurised air, preferably a standard pressurised air facility, so that the hydrophore and the ink chamber may be blown through for driving out cleaning liquid at the termination of a cleaning cycle.

20 10. System according to claim 8 or 9, **characterised in that** each cleaning nozzle is spring biased towards a closed position where it covers injection openings in the chamber, and that the pressure in the cleaning liquid overcomes the spring biasing by an injection shot.

25 11. System according to claim 8, 9 or 10, **characterised in that** the hydrophore is tubular and formed in a support profile for the doctor blade or in a section of the wall of the doctor blade in order to have short connecting lines/tubes between the hydrophore and the cleaning nozzles.

30 12. System according to any of claims 8-11, **characterised in that** a number of inlets and outlets are provided in the chamber, the inlets and outlets being distributed along the length of the chamber, as a row of inlets are disposed at one side of the chamber while a row of outlets are disposed at the opposite side of the chamber, that the row of inlets are connected with a common ink supply, and that the row of outlets are con-

nected with a common outlet for ink.

13. A cleaning nozzle for use in a chamber in a doctor blade, where pressurised cleaning liquid is injected into the chamber through at least one such nozzle, **characterised in that** it includes a largely mushroom-shaped nozzle body with a stem intended for mounting in the wall of the chamber, and which has a domed top of an elastic material, and furthermore that the nozzle also includes a second nozzle body in the form of a bushing for disposition in an opening in the chamber wall and with a central boring for accommodating the stem of the nozzle body and with through-going openings disposed thereabout, the openings covered by the domed top.

14. Cleaning nozzle according to claim 13, **characterised in that** the domed top is intended for covering injection openings in the chamber and designed with a radial inner and outer surface which is largely perpendicular to the stem and which is intended for contact with the chamber wall at the mounting of the nozzle in an opening in the wall, and that the radially outer surface is arranged to extend in unloaded condition to a position further down over the stem than the position of the inner surface.

15. Cleaning nozzle according to claim 13 or 14, **characterised in that** the stem is provided with screw thread and adapted to be fastened by screwing into an opening in the chamber wall, and that the domed top has a notch for engaging a tool.

16. Cleaning nozzle according to claim 13, 14 or 15, **characterised in that** it is made of plastic, preferably PVDF.